55. The control system as recited in Claim 54, wherein said optical system is configured to image light sources over a predetermined horizontal and vertical range defining said predetermined field of view.

56. The control system as recited in Claim 55, wherein said optical system is fixed relative to said controlled vehicle.

57. The control system as recited in Claim 55, wherein said optical system includes an image array sensor containing a plurality of pixels.

58. The control system as recited in Claim 57, wherein said pixel image array sensor is a CMOS active pixel image array sensor.

59. The control system as recited in Claim 55, wherein said optical system includes means for baffling light outside said predetermined field of view.

60. The control system as recited in Claim 57, wherein said optical system is further configured to spatially segregate light sources having different spectral compositions on said pixel image array sensor.

61. A control system as recited in Claim 54, wherein said image processing system processes images on a frame by frame basis and examines various frames in order to detect the motion of various light sources relative to said controlled vehicle.

62. The control system as recited in Claim 61, wherein said image processing system compares successive frames to detect vertical motion of said light sources relative to said controlled vehicle.

63. The control system as recited in Claim 62, wherein said light sources are overhead street lamps.

64. The control system as recited in Claim 63, wherein said image processing system compares successive frames to detect horizontal motion of said light sources relative to said controlled vehicle.

65. The control system as recited in Claim 64, wherein said light sources are reflected lights from stationary reflectors relative to said controlled vehicle.

66. The control system as recited in Claim 54, wherein said optical system includes means for filtering infrared light from said external sources of light.

67. The control system as recited in Claim 54, wherein said optical system includes two or more lenses and an image array sensor.

68. The control system as recited in Claim 67, wherein said two or more lenses and said array sensor are configured to image said predetermined field of view onto different portions of said image array sensor.

69. The control system as recited in Claim 68, further including means for filtering the light through said two or more lenses such that one of said two or more lenses filters light below a first predetermined wavelength and another of said two or more lenses filters light above a second predetermined wavelength.

70. The control system as recited in Claim 69, wherein said first and second predetermined wavelengths are the same.

71. The control system as recited in Claim 69, wherein one of said two or more lenses transmits light having a wavelength longer than 600 nm defining a red filter for imaging tail lights on one portion of said image array sensor.

72. The control system as recited in Claim 71, wherein tail lamps are detected by comparing the relative output of a pixel imaged through the red filter with the average pixel output of a selected group of neighboring pixels imaged through the red filter and indicating a tail lamp detection when the pixel output is a predetermined percentage higher than the average pixel output of said selected group of pixels.

73. The control system as recited in Claim 71, wherein another one of said two or more lenses transmits light having a wavelength shorter than 600 nm defining a cyan filter for imaging headlamps on another portion of said image array sensor.

74. The control system as recited in Claim 73, wherein head lamps are detected by comparing the relative output of a pixel imaged through the cyan filter with the average output of a selected group of pixels and indicating a head lamp when the pixel output is a predetermined percentage higher than the average pixel output of said selected group of pixels.

75. The control system as recited in Claim 73, wherein said image processing system includes means for processing images from said optical system on a frame by frame basis.

76. The control system as recited in Claim 75, wherein said image processing system includes means for detecting external headlamps in each frame.

77. The control system as recited in Claim 76, wherein said image processing system includes means for detecting tail lamps in each frame.

78. The control system as recited in Claim 77, wherein said image processing system includes a dim counter, which is incremented, whenever a frame is processed which contains at least one tail lamp or head lamp.

79. The control system as recited in Claim 78, wherein said dim counter is reset whenever a frame containing no head lamps or tail lamps is processed.

80. The control system as recited in Claim 79, wherein said control signal is generated as a function of the value of the dim counter.

81. The control system as recited in Claim 77, wherein said image processing system includes an undim counter, which is incremented each time a clear frame is processed.

82. The control system as recited in Claim 81, wherein said undim counter is reset when a head lamp or tail lamp is detected in a frame.

83. The control system as recited in Claim 67, wherein said image processing system includes means for computing the average output of a selected group of neighboring pixels in said image array sensor.

84. The control system as recited in Claim 54, wherein said control signal is used to turn the high beam head lamps completely on or completely off.

85. The control system as recited in Claim 54, wherein said control signal is used to continuously vary the brightness level of said high beam head lamps between completely on and completely off.

86. The control system as recited in Claim 85, wherein said control signal is used to vary the duty cycle of said head lamps.

87. The control system, as recited in Claim 54, wherein said optical system includes an image array sensor containing a plurality of pixels, and where the control signal is based on a pixel threshold value that varies as a function of the predetermined field of view imaged by said plurality of pixels.

88. The control system recited in Claim 54, wherein said optical system includes an image array sensor containing a plurality of pixels, and where the image processing system is configured to respond to a lower output from pixels imaging the predetermined field of view

directly in front of the controlled vehicle than from pixels imaging other regions of the predetermined field of view.

89. A control system for automatically controlling the state of the head lamps of a controlled vehicle, the control system comprising:

an optical system for imaging external sources of light within a predetermined field of view, the optical system including an image array sensor and two or more lenses, each configured to image said predetermined field of view onto two or more corresponding portions of said array; and

an image processing system for processing images from said optical system and providing a control signal for controlling the head lamps as a function of the relative output of the pixels imaging said external sources of light.

90. The control system as recited in Claim 89, wherein said optical system is fixed relative to said controlled vehicle.

91. The control system as recited in Claim 89, further including means for filtering the light through said two or more lenses.

92. The control system as recited in Claim 91, wherein said filtering means includes a filter dye for said two or more lenses.

93. The control system as recited in Claim 89, having a first lens and a second lens.

94. A control system for automatically controlling the high beam state of the head lamps of a controlled vehicle comprising:

an optical system for imaging external sources of light within a predetermined field of view onto an image sensor containing a plurality of pixels, said optical system configured to selectively transmit one or more predetermined spectral bands of light, and said optical system configured to image light within each predetermined spectral band onto different predetermined blocks within said image sensor; and

an image processing system for processing images from said optical system and providing a control signal for controlling the high beam state of the head lamps as a function of the output of one or more pixels within each of said predetermined blocks, relative to the output of other pixels within the same block.

95. The control system as recited in Claim 94, wherein said image processing system provides a control signal for controlling the high beam state of the head lamps as a function of the output of pixels within one of said predetermined blocks relative to the output of pixels within another one of said predetermined blocks and where each of said pixels within one block images substantially the same region of space as a corresponding pixel within the other block.

96. The control system recited in Claim 95, wherein the optical system contains two or more lenses, each lens having an associated filter to transmit a predetermined spectral band of light and each lens configured to image said field of view onto different designated blocks of said image sensor.

97. The control system recited in Claim 96, wherein the optical system is configured to prevent light passing through one said lens from arriving onto the block of the image sensor designated for light imaged by another of said two or more lenses.

98. The control system as recited in Claim 94, wherein said optical system contains a baffling means to prevent light from outside of said predetermined field of view from arriving on said image sensor.

99. A control system for automatically controlling the high beam state of the head lamps of a controlled vehicle comprising:

an optical system for imaging external sources of light within a predetermined field of view onto an image array sensor, said optical system configured to distinguish light sources which emit red light from those which emit white light, said optical system further configured to not image light in the infrared region of the spectrum emitted by said light sources, thereby